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COMMITTEE ON

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DEPOSITED BY THE
UNITED STATES OF AMERICA

NATIONAL DEFENSE PLAN BRIEFING

TUESDAY, JUNE 23, 1959

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND ASTRONAUTICS,
Washington, D.C.

EXECUTIVE SESSION

The committee met, pursuant to call, at 10 a.m., Hon. Overton Brooks (chairman of the committee) presiding.

The CHAIRMAN. The committee will please come to order.

I want to take this opportunity to inform members of the committee that I am appointing two members of our staff, Mr. Raymond Wilcove, staff consultant, and Mr. John Carstarphen, counsel, to make a continuing study of the contracts and contract procedures of the National Aeronautics and Space Administration and the other agencies over which this committee has jurisdiction.

Mr. Wilcove and Mr. Carstarphen will work closely with the General Accounting Office and will report their findings and recommendations to me so that I can determine whether further committee action is justified. In cooperation with the Comptroller General, one study is now in progress relating to a $102 million NASA contract with the Rocketdyne Division of North American Aviation, Inc., for the development of a large single chamber engine. This study is expected to take approximately 2 months to complete.

Now, when the study is completed, we will review it and decide whether it is a full committee matter or whether it should go to a subcommittee.

I had one other statement to make. I released a short statement regarding the executive hearing yesterday. I did it, I want the members to know, to take the pressure off the committee for statements, and I did it only after the short statement which was released was approved for security purposes by the Department of the Army. If you hear of that, you will understand why it was released.

Now, this morning we have a very distinguished witness and we have very important hearings. We have our friend, and he is a friend of ours, Mr. Holaday from the Department of Defense. He is going to talk to us about one of the most knotty problems in the Government at this hour. I don't know one problem which transcends this problem in importance as far as the security of our country is concerned.

So we are very happy to have you, sir, this morning. Do you have a prepared statement?

Mr. HOLADAY. I do not have a prepared statement, Mr. Chairman.

Mr. FULTON. Mr. Chairman, may I be excused a little while later to have a meeting with Mr. Herter. I will be coming back.

The CHAIRMAN. Well, this is a very important meeting this morning.

Mr. FULTON. I will be back.

The CHAIRMAN. Sir, if you would proceed with your statement.

STATEMENT OF WILLIAM M. HOLADAY, SPECIAL ASSISTANT TO SECRETARY OF DEFENSE FOR GUIDED MISSILES

Mr. HOLADAY. First, Mr. Chairman, I would like to give a brief here. Secretary McElroy usually gives the introductory to this. Since he is not here this morning, I thought that I would cover in a short way what he has explained as the background on which this air defense plan has been worked out.

He has 10 items here which he usually discusses from. I will touch on some of these more basic ones as they influence the program that we have put together. The approach which we made to this study, as you well realize, is that the problem was first put to the Joint Chiefs of Staff for recommendations on what our air defense program should be; in other words, take a new look from the day-to-day planning or year-by-year planning that had taken place, and this came back to us as a split paper and it therefore became necessary for the Secretary to make a decision.

Now in making this decision we worked, of course, very closely with the Joint Chiefs of Staff. We also worked with a number of consultants and technical people that have been closely involved in the air defense program during the past 4 or 5 years.

The first thing we had to conclude was that we had a continued bomber threat. We had to realize that this bomber threat had not been growing in intensity as to the number of bombers which the Russians were building but we felt they would continue in stock and use the number of bombers they had * * * but in addition we felt like we had an increasing ICBM threat, a missile threat against the United States. So one way of saying it is you have a pretty heavy or high bomber threat at the present time, a low ICBM threat, and this will probably change relatively like this [indicating] with the ICBM threat increasing over the years.

Also another item that we had to realize is that our air defense program and plans primarily up to this time have been based on trying to take out a bomber threat and with this increasing ICBM threat it became necessary for us to give more consideration to the developing ICBM threat. So as I go through this I will indicate to you the techniques and procedures that are being used to take into account the ICBM threat.

Now, in all of this, we have put together a plan which is shorter than the one we have had in the past. I would also like to talk to you about the advantages of certain of these weapons systems and also their disadvantages. Quite often on the Hill here you hear many of the advantages of these weapons systems but in the presentations you do not often get very much of the disadvantages of a particular weapons system. So I will talk about both the advantages and the disadvantages. It will show you why we have developed this plan which depends primarily as the first line of defense on the interceptor.

Then we pass down as the next line of defense to the Bomarc, the method of deployment which I will show you on the maps, and the

third line of defense for certain point targets where we have large industrial population or SAC bases will use the Hercules.

With that brief introduction I would like to turn to charts, mostly maps of the United States.

The first chart I would like to make reference to is the one on availability. This one I will leave up during the entire presentation because the availability of these weapons systems is very important in making any decision.

The CHAIRMAN. May I interrupt a moment. If there is any member who canot see the charts clearly, I suggest that he come forward.

Mr. HOLADAY. It may be a little hard for you to see.

The CHAIRMAN. Why don't you come around.

Mr. HOLADAY. On the top chart, I am using here defense units which happens to be two batteries of Hercules or one-quarter squadron of Bomarc, in order to keep from comparing lemons with watermelons. I am trying to compare apples with apples and this is very difficult to do, but in this chart here I am using this type of defensive unit which is the strike-back power of the particular ones.

Now across the bottom of course is calendar years and we have plotted this chart showing where we are now with Hercules conversions here in 1959. I will show you these on another chart, the five new ones that are being built, and this indicates the ones that will go around the SAC bases. Actually before * * * due to the availability of this equipment, we will have these units all deployed. There are * * * of these deployed now. A lot of work is in progress on these. These are * * * completed, and so we have the Hercules missile, due to the availability of both the missile and the ground support equipment, deployed * * *.

Now if you look down at the Bomarc part of the curve which is on the bottom here, the pink here is the "A" missile. * * * We are building bases * * *.

* * * * * * *

Now I would like to deal with the United States and I have several fold-downs which will come down over this. So I want to start out with the United States, showing that the red on here are the SAC operational bases as they are available today. The black is the one that takes part in the dispersal program which we are building. The blacks on here show the indications of how we will have our SAC bases dispersed when we get through with the dispersal program that is underway at the present time.

The CHAIRMAN. The blacks are the new bases using the dispersal program. They are all SAC, though?

Mr. HOLADAY. They are all SAC, but the blacks are the ones in the dispersal program, and I might point out that they are not new airfields. They are taking available airfields as we have them today, making the runways harder so that we can land the larger airplanes on them and also lengthening the runways so we can deploy the B–52's and B–47's on them. So this represents the dispersal. You will see some missile sites on here. These are some of the first missile sites to be located and we put them on here to get you oriented with their relative location in the United States as we deploy them.

Mr. FULTON. Could you stand the chart up more vertically so it does not reflect so much?

Mr. HOLADAY. Can you see that better?

Mr. MOELLER. That is much better.

Mr. OSMERS. Will you explain again the difference between the red and the black, Mr. Holaday?

Mr. HOLADAY. The reds are the current bases. The blacks are dispersal, the program of putting SAC's out on more dispersal areas.

The CHAIRMAN. Where are the missile bases you referred to?

Mr. HOLADAY. This is the one near Warren Air Force Base; here is the one outside Denver; this is Vandenberg Air Force Base in California.

The CHAIRMAN. What about Cape Canaveral?

Mr. HOLADAY. That is here [indicating]. That is research and design testing, not operation.

Mr. FULTON. Why are four SAC bases combined there in the center of California? What is the threat to that particular point? I can see it up along the northern border, or I could see it coming down the coast of Washington and Oregon and northern California, but I fail to see why there would be a direct threat from due west. The great circle route certainly would not be there. If you look at the conformity or the correlation between the east coast and the west coast there is a tremendous disparity. Of course, the same great circle routes are on the west coast that are on the east coast.

Now, if there are routes to be protected I could readily see that you would have one southern shield and a northern shield and a northwest and a northeast shield. Even in my particular area I do not see why you would have such a concentration there in Ohio and Illinois, or Indiana. I want to know your reason. There are no politics in this, are there?

Mr. HOLADAY. I am not going to attempt to answer your question as to the location of SAC bases, Congressman Fulton, because that is a military decision and not necessarily mine.

These, however, have been put in these areas. Of course these across the north as you well realize are to get us as near into Russia and to allow a strike as deep as possible. The dispersal into the other areas here has been to get us away to a degree from their striking force against us.

Now these are to strike the enemy, not necessarily to defend us. So we quite often use areas for location which have good flying weather to a certain degree. Also they are located where we can acquire land without excessive cost.

Mr. FULTON. My point is this: You are showing us a chart. We are then supposed to make a correlation in our minds, a pattern of it. I am. I see the pattern for the east coast which is entirely different from the west coast. So I am really raising the question why should you put another SAC base in an area in California that already within a hundred miles has three and you are adding a fourth one? To me that is logically impossible to take, especially when you have a conformation and pattern on the east coast that looks logical to me. There is none in Pennsylvania, and I am from Pennsylvania.

The CHAIRMAN. Let me suggest this. The purpose of the hearing this morning is to develop scientifically the need for missiles and certain types of missiles, rather than the strategy. Now, I have been on the Armed Services Committee like Mr. Osmers has. I understand

the reason for it there, but I think our problem this morning is largely scientific rather than strategic.

Mr. FULTON. Yes, but I would like to know why put one extra SAC base in an area in California where you already have three obviously within less than a hundred miles and you are adding a fourth one. You please tell me that. It is your chart, not mine, and I am representing the State of Pennsylvania. Why are you doing it?

Mr. OSMERS. Mr. Chairman, I would like to know the answer specifically to the questions being asked, but I do not see how Mr. Holaday could or would want to make an answer to that type of military question. I think it should be directed to someone in the military.

The CHAIRMAN. He is in charge of missiles and not in charge of SAC.

Mr. FULTON. Then I would suggest that the witness drop the chart because he should not be here speaking on dispersal if he is not competent to testify as to where the bases should go on this policy of dispersal.

The CHAIRMAN. He is very competent. He is a fine man and a very able man.

Mr. FULTON. Well, you and the gentleman from New Jersey say he should not testify on why these things are dispersed in a certain way.

The CHAIRMAN. Why not let him go ahead and finish his testimony and then we could ask questions.

Mr. OSMERS. Mr. Holaday needs no defense from me, but the reason I think it is important that the committee see the location of these very important bases is that the missile program which Mr. Holaday is here to describe will fit into the picture of the defense of these very important installations.

Mr. HOLADAY. Mr. Chairman, I did not show this chart to attempt to defend it. This is a dispersal set by the J.C.S. It is not my chart. This is where they are locating their bases and I have used this chart to show where the bases are that have to be defended by the air defense program. This is not in any way to try to influence you as to dispersal. I wanted to show you what the J.C.S. are doing for the deployment of SAC, and the job of the air defense is to protect these SAC bases. This is the Hercules, and by use of colors I want to show you where the various Hercules units are located at the present time, how they have been put in and the new ones to be added.

Again I think you can still see the airplane showing through, and this is part of our defense to try to protect these SAC bases. The ones in green were put in with money prior to 1958 and they were put in mostly as Ajax units. There were * * * batteries of them deployed in the United States as part of our defense program. With the introduction of the Hercules missile and the Hercules missile system and the fact that one can replace the other one, we have moved into many of these locations and have added—not added, but displaced Ajax and put in Hercules by a conversion program. At the present time * * * of these Ajax have been replaced with Hercules missiles. * * * of them will be converted within the next few months so that we range from here in Chicago there are * * * batteries in the total, out here in Seattle there are * * * in the total. When we do it you will notice that the cross-hatched large green area is much larger than the small

one which is the capability of the old Ajax. This shows the increase in range and capability of the Hercules missile over the old Ajax.

The CHAIRMAN. Mr. Holaday, can the Ajax base be used for the Hercules without much change?

Mr. HOLADAY. There is some conversion. There is some new electronic equipment. The launchers are almost the same ones. They have to be modified slightly to take the new missile but this is a small expense compared to building a new base so we convert and put Hercules—not all of them are converted but we add some Hercules onto an Ajax unit so we do not have to acquire new land and have a new setup. There will be * * * batteries of Hercules located on these green spots.

Mr. FULTON. Would you give us the route of offense that these Hercules batteries are set up to defend against?

Mr. HOLADAY. The Hercules can fire in any direction so you could take any attack coming in any direction.

Now as we get along with more charts which I will drop on to this later, Congressman Fulton, we will show you the possibility of attack * * *.

Mr. WOLF. Why not from bases in South America?

Mr. HOLADAY. This is a possibility. We do not know of any base being built at the present time in South America for the Russians to use.

Mr. WOLF. How about Cuba?

Mr. HOLADAY. You will note we are putting some of the Hercules across the South * * *. All things are possible. We just do not believe that in the planning the Russians would use that technique or procedure. If they did, we would have considerable warning as to the fact that they were trying to get bases in South America.

The CHAIRMAN. Do you have any missile bases that will reach over to Cuba?

Mr. HOLADAY. No, sir, none of these defense systems that we are building will reach as far as Cuba. These * * * red ones * * * here [indicating] were money that was appropriated in 1958 to build these * * * new Hercules deployments. * * *

Now the light gray ones on here are 15 more SAC bases that have been recommended for the deployment of Hercules missiles. These can be built and part of our recommended program is to add these 15. These can be built, the men and missiles deployed before the end of * * *. So we are getting back to that chart up there as to the availability of the system. I might say that these particular locations here were selected by the Acting Chairman of the Joint Chiefs of Staff and by General Partridge, Air Defense Commander, as to where he wanted more defense of these localities.

Now, I would like to turn to the Bomarc system which begins to cover up a bit more of the United States; and the four bases were originally approved in the 1958 construction money at Dow, Otis, Suffolk, and McGuire. Those were the four original "A" sites, and then in 1959 we approved one more to go in at Langley. The overall program we are presenting here is a total of 16 U.S. Bomarc sites. In addition, two are located in Canada * * *.

The new ones which would be added are to put in one at Niagara, one at Kinross, and Duluth; they are under construction at the present time.

We would then go to the west coast * * * and build one at Payne, Camp Adair, Travis, and Vandenberg. We would build * * * across the top of the United States, at Malestrom, Glasgow, and Minot, and * * * down here * * * at Charleston. * * *

Now, I would like to explain these curves here, the dark-shaded and the light-shaded part. The dark part here is to represent the capability of the "B" missile at low altitude. The lightly shaded part is the capability at high altitude.

* * * * * * *

Now, I do not want to run down either one of these systems, but I do want to point out they do have many limitations. We are trying to use in our method of defense here both the advantages and if a missile has a disadvantage try to correct that disadvantage with some type of another missile system to back it up.

* * * * * * *

The CHAIRMAN. I noticed last night in the press that a contract was awarded for the construction of a 2,000-mile-per-hour airplane. How would the Bomarc handle itself as to that sort of thing?

* * * * * * *

Mr. HOLADAY. I would like to correct your statement. We are not building that type of airplane. We are starting only the early research and development. We are doing the R. & D. to determine if it is possible to build that kind of airplane. We have in our research and development program two airplanes that are up in the mach 3 speed range. One is the F–108, which is an interceptor. The other one is the B–70. They have been under consideration and discussion. They have been carried, both of them, at a very low rate of research and development in the Department of Defense.

The CHAIRMAN. That was the B–70 I think I read about.

Mr. HOLADAY. That is right. That is a bomber which would operate at about a mach 3 speed and this is in the very early stage of its development.

Mr. FULTON. What is mach 3, at what height?

Mr. HOLADAY. Well, the speed in miles per hour changes with height.

Mr. FULTON. What is it, at what height?

Mr. HOLADAY. At any height, except you cannot drive at mach 3 much under 45,000 feet, so we would not operate a B–70 at mach 3 except in ranges above 45,000 feet.

Mr. FULTON. How many miles an hour is that at that level?

Mr. HOLADAY. About 1,800 to 2,000 miles per hour.

The CHAIRMAN. Now, Mr. Secretary, here is what concerns most of us: What are we developing in the way of a defense against the high-speed plane or the missile?

Mr. HOLADAY. Well, I will get to that in just a second. If you would go along with me, I will touch on that a little later. Now, I would like to talk about the Hercules system.

It has some capabilities and it also has some shortcomings too. * * *

You have to orient these systems to the speed and the target against which they are operating.

Mr. WOLF. But it would knock a mach 3 target down?

Mr. HOLADAY. That is right.

Mr. WOLF. And the Bomarc is much more limited. So the Hercules is the only thing we would have to knock down a mach 3 target.

Mr. HOLADAY. The Hercules is what would operate against that target.

Mr. WOLF. So the Hercules could knock down the Bomarc.

Mr. HOLADAY. Yes.

Mr. OSMERS. In these references, Mr. Holaday, you are speaking about the Bomarc "B" and not the "A," and this is a weapon still * * * away.

Mr. HOLADAY. * * *

Mr. OSMERS. And that is the one that will cover up to the 1.5 mach target?

Mr. HOLADAY. That is right. The "A" has slightly less capability than the "B."

Mr. OSMERS. It is planned to have Bomarc "A" but I assume that the overall plan is to phase them out just as soon as the B's are available, is that correct?

Mr. HOLADAY. Well, we necessarily are not going to plan to phase them out because they do still have a very good capability * * *

Mr. OSMERS. I would like to ask Mr. Holaday this question. If he declines to answer, I can understand it is something he would not want to comment on. In view of the fact that some intelligence estimates go along the lines that the Russians have not proceeded as far and as fast with their long-range bomber program as we originally thought they might, do you feel that we may be overdoing the defense against a long-range bomber threat that in reality does not exist? I am assuming that the Russians continue to have a long-range bomber fleet not in excess of 200 planes. It seems to me that this elaborate defense against that type of weapon may be going too far and too late considering that the missile may be and probably is the real threat.

Mr. HOLADAY. Well, I will try to answer that for you in two ways. I will say this in the first place: We do not have any indication that they are adding in any great way to their strength of bombers. However, we believe that they are still building. * * *

So, as I pointed out in the very start of this, we do not believe this is a growing threat, but we believe it is a continuing threat for a number of years.

Now another way to answer your question. Originally, the program on Hercules in the United States—I will not go back very many years because it was very large a few years back, but I will just go back a couple of years. They were going to add them to * * * SAC bases here in the United States and in this one we have added only 15 and in the 15 most important areas * * *.

We are also trying to realize if our bombers leave we have to have some airfields protected for them to return to. We have reduced the Hercules quite materially for the earlier program.

Now in the Bomarc, in the Air Force plan they were going to put * * * Bomarc bases in the United States and actually if I put * * * of these over the entire United States you would well realize that we get them very thick. There would be a line just 200 miles back of that one going across here [indicating] and they would go down here and by the time you get * * * in here you have them about 200 to 250 miles apart over the entire United States.

Now by our reevaluation of the threat we decided that this was entirely too far for the United States to go.

The CHAIRMAN. Well, Mr. Secretary, why would you build the bases when the Bomarc is not available and will not be available for several years?

Mr. HOLADAY. Well, let me answer that in this way: The plan was to put these * * * in. I believe we finished getting those deployed about the end of * * * and we do not believe that the threat is of such character at the present time that we should try to plan out that far.

The CHAIRMAN. Well, now the bomber begins to phase out from * * *. From then on it will begin to phase out and your missile threat will come in. Why would you then in * * * build for meeting bombers when the threat is beginning to phase out?

Mr. HOLADAY. Well, that is just the reason we have reduced this program materially. We believe this is as far as we should go. Where we can look at the intelligence at this time is to put in this type of defense and complete it by the middle of * * *. We have the Hercules in now and our present defense is interceptors and Hercules. * * * So anybody attempting to attack us would have to feed first through our interceptors. As we reduce our interceptors as this Bomarc is added here, which goes in during the period of * * *. The interceptors will be reduced from * * * squadrons to * * * squadrons. Therefore, this is about a buy-out of our air defense against manned bombers as we see it today.

The CHAIRMAN. You say anybody going to attack us. You mean anybody who is going to attack in an airplane?

Mr. HOLADAY. With manned bomber attack.

Mr. WOLF. We have a Nike-Hercules that has a proven capability. He has admitted it will knock down the Bomarc. The Bomarc is still a dream, it is not a reality. They are not even going to try the seeker until this fall. We could buy 2,400 Nike-Hercules for the price of 60 Bomarc B's.

I am just wondering why we could not scatter some more Nike-Hercules sites. This is a proven weapon with a capability today. The Bomarc is a dream. It is a ramjet with a limited altitude range. I still cannot buy the reason why we are wasting so much money on a program that is still a dream.

What you say is true, it is going to be too late, and when you get it, it has no capability. We have several weapons that can knock it down, as attested to by the very statements he has made, in our own fleet. Surely the enemy has these too.

Mr. OSMERS. Mr. Chairman, I think it would be helpful to the committee if Mr. Holaday would take a few moments with the question Mr. Wolf has asked to develop what I do not think is as well known as it should be. That is the fact that the Nike-Hercules and the Bomarc B are not considered, shall we say, by the Department of Defense, to be competitive in the sense that they are weapons that perform the same task. I wonder if you would develop that a little bit.

The CHAIRMAN. May I also suggest this, Mr. Osmers. When he does that—and I think that is a good idea—that we let him then go ahead and proceed with his statement because I want him to get to the Nike-Zeus and tell us something about that.

Mr. HOLADAY. In talking about the advantages and disadvantages of these I do not want to be misunderstood. The Bomarc has many advantages over the Hercules.

Now you have to orient your thinking first with the statement that I made that we are going to reduce our interceptor squadrons from * * * down to * * * at the same time we are putting in the Bomarc missiles. Now the Bomarc missile is an expensive missile but one of its greatest advantages is against a mass raid against us. In other word, the firepower of the Bomarc is much greater than the firepower of Hercules. From any one of these sites—take Duluth as an example here—and assume there is a mass raid coming down. We can launch 30 missiles at one time, all right together, just like that. We start them out toward the raid and we guide them in the time that they are going out, and if this is a concentrated raid I am quite confident the Bomarc would tear it to pieces. Each one of those missiles as it is taken out over the area—and I will touch later on how we guide them—would strike the enemy quite a ways away from us. One of the big advantages of the Bomarc is its fast firepower. In other words, we could launch * * * of them at one time, control them and guide them out here and put them against a mass raid.

If you only had one or two coming in you would of course only launch one or two missiles, but against a mass raid coming in—and this is probably the way they would strike us—* * * missiles launched at one time is a very heavy striking power against a mass raid.

It also has a reduced number of men compared to the Hercules. Hercules takes up around 550 to 600 men, to a squadron of 4 batteries. I believe the total number of men here to deploy * * * missiles on one of these sites is less than 200. This has something to do with it.

Now if you would try to defend this same area and keep these fellows off our shores, because we are trying to strike them as far away as possible, there is a great advantage in using a missile like the Bomarc "B". Now it is true that "B" is in its early stages of research and development, but "B" is an outgrowth of the "A" missile system and we have done considerable testing with the "A" missile and it is quite effective. So we believe, because we have had a technical evaluation of it, that there is no reason why the "B" missile system will not give us this capability to strike the raid far off our shore, and this is a great capability. The "B" missile is nothing but an unmanned interceptor which you throw right at your incoming targets.

Now the Hercules in turn, if you look at the relatively little circles, its capability and range is very small to what we get here with 16 squadrons of "B's."

Mr. WOLF. Now say the same thing about the Nike-Zeus.

Mr. HOLADAY. I will come to that in a little bit.

Mr. WOLF. Make the same comparisons.

Mr. OSMERS. But it is a different purpose, Mr. Chairman.

Mr. HOLADAY. The Nike-Zeus is an antimissile missile and is not being developed against manned aircraft.

The CHAIRMAN. Whereas these two missiles you are referring to are developed against manned aircraft?

Mr. HOLADAY. Yes, and I would like for you to consider that these programs, as far as we visualize now, are both on a buyout basis. This is as far as we can go at the present time with the installation of missiles against manned attack.

Mr. DADDARIO. Mr. Secretary, you are also assuming that this manned attack will come with aircraft of a slow enough speed so that this system will have the capacity you are talking about. If we have an attack in 1963 or 1964 by aircraft flying at 2,000 miles an hour, this will be completely ineffective.

Mr. HOLADAY. Well, we do not see any reason from our intelligence that the Russians would have a high-speed bomber. Take our B–70 we are developing at the present time. You must realize it will take us 8 to 10 years to develop a B–70 bomber and we do not believe that the Russians will go much faster than ours in it. So as you look at the intelligence you see no threat at the present time that these missile systems would not work against as far as manned aircraft is concerned.

Mr. KING. Mr. Chairman. Mr. Secretary, what does the Canadian Government say about our northern line of defense which in effect would be knocking down the nuclear warhead they would be using in their attack, knocking all of them down on the northern periphery on Canadian soil? Have we had any conflict of thought with the Canadian Government on this line of defense?

Mr. HOLADAY. Well, I think it is a very good question. I am going to duck it slightly but also attempt to give you an answer.

The Canadians have two of these in here * * *.

All of this planning has been done in conjunction with the Canadians.

(Further statement off the record.)

Mr. HOLADAY. Now the next item I would like to talk about—I have been talking about missiles. Now I would like to talk about the Bomarc weapon system.

You understand that the Bomarc weapon is a missile that I said was a pilotless interceptor. To guide it and make it go places you have to have the pilots on the ground. The pilots for the Bomarc system happens to be SAGE, and you do not often hear SAGE directly connected with Bomarc, but this morning I am going to try to tie Bomarc and SAGE very carefully together to show you what our problem is.

This is SAGE as you probably have seen it presented to you and is now being built. This is each one of the sectors that we are building SAGE in, and this is the electronic environment around SAGE to direct the Bomarc missile, to direct interceptors, to get our SAC airplanes out of the United States, and it is even being used to control the air traffic in the United States. The only non-SAGE sector was a small area out here and through negotiations with Pete Quesada we were talking about putting radar in here so Pete Quesada could handle the air traffic in the United States.

If you recall, we deployed Bomarc around the outside of the United States. Now I would like to show you our recommendations on modification of SAGE which is part of this program as we are presenting it to you. * * *

Now out over the ocean you will recall that we were also deploying it and showing its usefulness out over the ocean here quite a ways. Now what we have at the present time is airplanes flying off the shore here. * * *

The CHAIRMAN. On the other hand, on the Hercules you do not need that?

Mr. HOLADAY. That is right, but you would have to be shooting your targets down right over your shores with the Hercules because the Hercules will not reach out far enough to get any distance over the water.

The CHAIRMAN. Then we get to the Zeus.

Mr. HOLADAY. Well, that is antimissile missile and not to be used against manned bombers. Now getting north over Canada, to do this we have to extend our radar system up there quite a way. * * *

The CHAIRMAN. How much have we already spent on SAGE?

Mr. HOLADAY. I do not know the exact number. It is up in the billions now. It is about 2 billion so far.

Mr. WOLF. Before it is completed you will have about 7½ billion in it?

Mr. HOLADAY. Not quite, I hope, under this new plan, but we will begin to get up there.

Mr. WOLF. I still cannot understand, Mr. Secretary. If the Nike-Zeus has a capability against a missile, why not against a slower moving manned target? I would think it would be a natural against that. Why would it not be effective against slower moving aircraft, too?

Mr. HOLADAY. Well, it would be. I will discuss that further when I get to the Nike-Zeus. It sounds easy to say it that way. It gets complicated technically. I will discuss that more when I get to Nike-Zeus.

Now these square dots here are the supercombat centers for the SAGE system and they are hard made. * * *

Now one might ask why we do this. I said we would have an increasing threat from ICBM missiles * * *.

There were originally 10 of these to be built and hardened. We have only approved six of them in the United States. I would also like to point out one of them is in Canada * * *.

Now inside of this red and green area we are building and carry out only a minimum capability SAGE. I call it an austere-type SAGE. * * *

Incidentally, the SAGE system as it was laid out was to build up this coast here [indicating], down this coast here [indicating], and across here. So that fact is, if you probably noticed the way in which we are deploying Bomarcs, the SAGE system has to be in for the time we get the BOMARC missile.

The CHAIRMAN. You have given up the gulf coast in effect?

Mr. HOLADAY. * * *. We will have enough radars in this area to detect a raid against the country.

Now I would like to turn for a short time to discuss the Zeus missile system. The Zeus as it is currently being developed is an antimissile missile. And it is the only active defense anti-ballistic-missile system under development. It is in its early stages of research and development. The missile itself is not the difficult part of the program. It is the electronic equipment that goes with it that becomes the difficult part of the program * * *.

Now in the program, we are recommending that $150 million more be put into that.

The CHAIRMAN. Can you adapt SAGE to use it with Zeus?

Mr. HOLADAY. No.

The CHAIRMAN. Why?

Mr. HOLADAY. The radars are not capable of seeing far enough. They work on a * * * cross section which is a big bomber cross section area. They have a good capability against this type target but when you get down to * * * it takes a very particular type radar and we do not try to cover the same area with our radars on somethink like Zeus that we do with the ones on SAGE. You could upgrade SAGE probably by spending multimillion dollars by putting in new radars, but we like to have our ones looking at antimissiles looking higher into the air rather than what we do with the SAGE radar which is to sweep from the ground up to about a * * * feet.

The CHAIRMAN. Could your SAGE system not be adapted, though, without the same cost as the new system?

Mr. HOLADAY. I do not know that we would save much. They could be added in. In fact our considerations of the radars that will go with Zeus, we will probably feed the communications back through the present SAGE communications system but would not necessarily try to replace all of the hundreds of radars, or I should probably say thousands of radars that are in the air defense ground environment.

The Zeus development work at the present time and the spending of this $137 million is to get on with some of what we would call early prototype engineering work * * *.

* * * * * * *

The CHAIRMAN. If we can develop radar with * * * mile tracking for our own missiles, we could do it against Russia's, too, could we not?

Mr. HOLADAY. Yes.

If we can see our own nose cones during our test programs down here, it shows we will then be capable of seeing an incoming nose cone from the Russians.

Mr. OSMERS. Mr. Chairman.

The CHAIRMAN. Mr. Osmers.

Mr. OSMERS. A question. I would assume that that would mean you had success in tracking them at high altitudes primarily if you went out to * * * miles. Were you able to keep them on as they got into comparatively low altitudes or not.

Mr. HOLADAY. Actually what we did, we saw the nose cone from the ship's location * * *.

Mr. OSMERS. * * *.

Mr. HOLADAY. Yes. We have a lot more work to do on this but this encouraged us in our capabilities, that we can develop this kind of radar for this work.

The CHAIRMAN. Is there any serious thought that the Russians could put out decoys that could be tracked * * * miles?

Mr. HOLADAY. We do not believe that it would be difficult since our own technical people believe they could make decoys * * *.

The CHAIRMAN. They could not, for that length of time, follow the characteristics of a missile, could they?

Mr. HOLADAY. Oh, yes, sir.

The CHAIRMAN. * * *.

Mr. HOLADAY. * * *. I see no technical reason at all that they could not be made to act just like a warhead.

Mr. OSMERS. Mr. Chairman, they would be the same weight, size, shape——

Mr. HOLADAY. No. * * *.

Mr. OSMERS. It will be a very difficult thing for a radar to distinguish between decoys.

Mr. HOLADAY. Yes, this presents us with one of our problems of defense. * * *

The CHAIRMAN. You have the same problem with manned aircraft. They put out decoys to jam your radar, an awful lot of metal in the sky to jam it.

Mr. HOLADAY. Also you use decoys on your airplanes. * * * Now the other point that I wanted to touch on and I will be through here in a second except for the money end of it, is that the three BMEWS stations we started out to build will be completed. * * *

* * * * * * *

Those types of passive detection devices will be carried at a very high research level. You also know that in ARPA we have continued advance work on radar. While they are working very close with us on the Zeus system, they are still trying to develop even better radars than the ones we are currently developing for the Zeus system.

Now, if you like, we have a money chart here, Mr. Chairman. Mr. Logan could show you the effects of this program, the savings in 1959 and 1960 and also that which takes place in later years as to this program versus what had originally been planned. Are you ready for that?

The CHAIRMAN. Let me ask you this, before you do that. Is ARPA handling or developing the radar and is the Army developing the Zeus?

Mr. HOLADAY. No, sir; the radars that go with Zeus are developed by the Army. ARPA is carrying on advanced research work on radars.

None of their work would we even plan to think that it would move into the early stages of making hardware for another * * * years yet.

They are doing only advanced radar research work and the radars that go with Zeus are being developed by the Army.

Mr. MOELLER. Mr. Chairman.

The CHAIRMAN. Mr. Moeller.

Mr. MOELLER. Mr. Secretary, you may have said this while I was out. Where are the light-weight installation spots for the Zeus? Are they determined yet?

Mr. HOLADAY. No, sir. As under the Zeus system, it is going to have to be a point defense type of unit, while the missile will reach out * * * into the air and it probably can go to the side * * * miles, this still keeps it in somewhat of a point type area.

Considerations have been made by the Joint Chiefs of Staff on some location of some * * * of these.

* * * * * * *

This is a very expensive system.

The CHAIRMAN. Mr. Osmers.

Mr. OSMERS. Just one question.

I want to get back to the Nike-Hercules and Bomarc programs. Are both systems considered to be effective against very low flying planes, that is, under 1,000 feet?

Mr. HOLADAY. The Bomarc B has a capability to come down to * * * feet. The A does not. It is limited to * * *. We are putting a new type of seeker in the B missile and by putting the radars out at a long distance ahead of the thing we hope and believe it is possible to make the B effective against a target at * * * feet.

Now this is, again, a reason why we are trying to carry this battle on a way off of our shores because while these are w kiloton warheads, * * * kilotons exploded at * * * feet would do considerable damage on the ground, so you can see our need for wanting to push this away from us.

* * * * * * *

So we have been pushing those out. Now the Hercules has a capability at low altitude but all of its radars are located right around the firing unit so all it can see is just over the horizon, so against low altitude it has very little capability.

We would rather limit Hercules down to about * * * feet because, if it was coming in right on the deck, you see, it would be right on you before you could launch against it with your radars in close there.

Mr. OSMERS. In other words, until we have Bomarc B in operation at low altitudes * * * we have a very serious defense problem except with the use of our interceptors and, of course, they are low-flying targets for an interceptor.

Mr. HOLADAY. That is right. * * *

This is a difficult one to solve. * * *

Mr. OSMERS. It would be all right, if he could find them.

Mr. HOLADAY. Yes, but it is a difficult thing for him to be able to do * * *.

Not any one of these things is the answer to the maiden's prayer in itself. So you have the interceptors and the Bomarcs and the Hercules backing the thing up and making the problem very difficult for him to break through.

This is the reason the application works out to our advantage.

* * * * * * *

The CHAIRMAN. It seems to me what you are really telling us is that our defense is still going to be retaliatory. In other words, the defense is so imperfect that we have to rely upon the possibility of quick and devastating retaliation.

Mr. HOLADAY. This is very true, Mr. Chairman. Our whole defense is primarily built around a retaliatory type strike and any defense system, I think, is always to a disadvantage.

It never can be made perfect. You have to build up enough of it so that you make it difficult for him and also that he realizes he is going to lose lots of planes but if they want to attack us with a fleet of 400 or 500 and make a crash attack on us, they can break through any of our defenses. But, if he knows he is going to lose out of those 300 to 500 airplanes, he is going to lose 400 of them trying to get through our defenses, he will think twice before he attempts to attack us.

* * * * * * *

The CHAIRMAN. Therefore, it is up to us to have more and better ICBM's than Russia has.

Mr. HOLADAY. It is very important that we keep up our striking power against him so he knows if he starts anything we are going to wade in and really destroy him.

Mr. ANFUSO. Mr. Secretary?

The CHAIRMAN. Mr. Anfuso.

Mr. ANFUSO. Mr. Secretary, do you think that the Russians now have in operation the submarine that can fire a missile at least 500 miles range?

Mr. HOLADAY. If you do not mind my interrupting at this time, since I am giving freely with information today, I trust that you will allow me to take out pages of this in the thing.

The CHAIRMAN. We are going to give you the right, Mr. Secretary, to cut out everything you want. The other day, the press referred to the fact that before this committee the chairman said "we are glad to have the witness here and goodby" and that was all that was left of his testimony.

Mr. ANFUSO. Before you answer that question, Mr. Secretary, I want to give you a little background. I read, for example, in this morning's newspaper that Russian submarines were actually seen and photographed and the actual openings from which ballistic missiles could be fired were seen and photographed.

Mr. HOLADAY. Well, I have been in on this quite a bit the past 4 or 5 days so let me tell you what I know and I will have to take quite a bit of this out of the record. I feel, when you ask me questions I have to be as responsive as I possibly can. It is the only way you are going to get the facts. * * *

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The CHAIRMAN. That is the reason you are weakening the gulf defenses. You do not believe they have the Polaris type submarine.

Mr. HOLADAY. The gulf is a little hard to come in with a Polaris type submarine on account of the depth of the water down there. Of course we are open, I might point out, Mr. Chairman, to a submarine-launched ballistic missile around our coast. We are open to this until we get some type of an anti-ICBM or anti-ballistic-missile defense system like Zeus.

* * * * * * *

Mr. ANFUSO. And Polaris will be in operation by the end of 1960?

Mr. HOLADAY. We will have the first submarine operational by then, yes, sir.

The CHAIRMAN. In the light of that statement, don't you think we should push the Nike-Zeus program faster than we are?

Mr. HOLADAY. Well, I know how you feel about it, Mr. Chairman, but I happen to be a technical man, and I question whether we can run any faster than we are running now.

The CHAIRMAN. You think we are running at top speed now?

Mr. HOLADAY. I think from what we know and what we have to develop in this thing, we are running at top speed right now.

Could I give you the money information now?

The CHAIRMAN. Yes.

Mr. HOLADAY. This is Mr. Logan, of Secretary McNeil's office, and he will give you the money part of it.

Mr. LOGAN. We have prepared this chart to reflect the budget and fiscal applications of the program Mr. Holaday has been outlining this morning.

You will note that we have a current line on this chart for each of the programs involved in the air defense picture that he has discussed. That current line is the amount of money that we had against the program before the new look at the air defense plan.

The revised line is the pricing out of the program that Mr. Holaday has presented this morning, and the difference is the overall reductions that we expect to see in this program. It is divided by 1959 and prior year programs, which means, in effect, investment to date.

The 1960 program, which corresponds generally to the budget that is now being considered by the Congress and the amount required to complete the program in 1961 and future years and the toal program as we see it today.

* * * * * * *

Mr. WOLF. May I ask if this includes the guidance systems that go with Nike-Hercules?

Mr. LOGAN. This is the total weapons system.

Mr. WOLF. But in Bomarc it will not be included?

Mr. LOGAN. It is included here in the supporting systems for the Bomarc missile.

* * * * * * *

The CHAIRMAN. What is the cost of our Bomarc program, plus the supporting requirements there, for radar and so forth?

Mr. LOGAN. Well, all of the lines on this chart relate to Bomarc except the first one, Nike-Hercules.

* * * * * * *

The CHAIRMAN. The ratio of costs runs better than 3 to 1?

Mr. LOGAN. Yes.

Mr. HOLADAY. I think I better interrupt here.

The SAGE system ground environment cannot all be charged to Bomarc because it is used to direct interceptors, and it is also used to get our bombers out of the United States.

This has always been our problem: What do you charge SAGE to, and so I think we have to charge SAGE against interceptors, against the Hercules missile to a degree, and against Bomarc very definitely, and against getting our SAC bombers out of the United States.

Mr. LOGAN. Mr. Chairman, I might also mention in the case of Nike-Hercules we are getting some benefit from the funds expended in connection with the Nike-Ajax program. That amounted to about $1,250,000 invested in Nike-Ajax to date, and this Hercules is in addition to that.

Now, in total for these programs we see that we are about $1.4 billion under the ultimate pricing-out that we had seen a few weeks ago.

Now, at the bottom here we have shown Nike-Zeus. Mr. Holaday has pointed out that is a development program at the moment, and we can't see at the moment where we are going cost-wise, so we have not attempted to project this beyond the amount of money we want to invest in Nike-Zeus through the 1960 budget.

The CHAIRMAN. We were given a figure earlier that it will be around $8 billion.

Mr. LOGAN. Secretary McElroy has indicated it would run at least that amount.

Mr. HOLADAY. Just how fast it would go, Mr. Chairman, in 1961 or 1962, we are not able to point out to you. We have quickly calculated from what we know today that if we put in some 40 or 50 sites, that we would have spent with the Research and Development money the total of something around $8 to $10 billion.

That is a guess, probably an educated guess, and that is about as far as we can go with it.

Mr. LOGAN. Mr. Chairman, this completes a brief look at the money picture as it regards Mr. Holaday's plans.

If there are any questions, I shall be happy to try to answer them for you.

The CHAIRMAN. Mr. Anfuso wants to ask you a question.

Mr. ANFUSO. Some time ago, I believe, the Hercules and Bomarc projects were intended to be a defense against an air attack by the Russians, isn't that correct?

Mr. HOLADAY. That is right.

Mr. ANFUSO. Didn't the Russians abandon that form of attack, therefore making the Hercules and Bomarc projects obsolete at this time?

Mr. HOLADAY. No, sir. As I pointed out at the start, and I guess you hadn't come in yet, we have a feeling that we will have a continued attack threat by manned bombers. We know that they have some long-range bombers, and they have some shorter-range bombers, which can reach this country on a one-way mission. * * * So in this program we have developed here we have assumed we will have a continuing threat by manned bombers.

I also pointed out that we believe we will have an increasing threat by ICBM's, and a way to look at it now is if they were going to attack us today, it would be all manned bombers. Maybe * * * years from now they might attack us with a few ICBM's and then follow in with manned bombers as the clean-up.

Now, you can carry that thought a little bit further on, more years down the way, and they get to the place where they would depend solely on ICBM's. So this program that we have presented here is against this continuing threat but on a buy-out basis. We are buying this equipment. We are installing it. We do not see that we would continue to put money into a defense against manned bombers. Our money for defense would be against ICBM's.

Does that help you, sir?

Mr. ANFUSO. Thank you.

The CHAIRMAN. Now then, let me ask you this.

Summarizing this situation, you intend, then, under the program announced by the Defense Department, to go ahead with both your Bomarc and your Nike program?

Mr. HOLADAY. Yes, sir.

The CHAIRMAN. Putting in how much for Bomarc in the coming fiscal year?

Mr. HOLADAY. The amount that goes in in 1960, the program on Bomarc is a little less; we had planned to put in * * * million. We will put in * * * million.

I might explain what that is. That is a reduction of $35.8 million. We are not going to build as many Bomarc bases as were in the program. * * *

The CHAIRMAN. You are adjusting that by announcing in advance a program to cut your interceptor bases in number?

Mr. HOLADAY. That is right.

The CHAIRMAN. Then, on the Nike Hercules, you are putting up how much money?

Mr. HOLADAY. In 1960, we are putting in * * * million, almost $33 million less. That is because the program was geared to go to * * * SAC bases, and we are only putting in 15 SAC bases.

The CHAIRMAN. And you are requesting for the Zeus program 137?

Mr. HOLADAY. 137 more, yes.

The CHAIRMAN. That is in addition to what you have already requested?

Mr. HOLADAY. That is right.

We originally had * * * million, and we now want to add 137, so this program in 1960 would be at * * * million.

The CHAIRMAN. Almost * * *?

Mr. HOLADAY. That is correct, sir.

The CHAIRMAN. That is as much money as the Zeus program can absorb?

Mr. HOLADAY. That is our belief, sir.

The CHAIRMAN. When we were down there at Redstone, they were worried about the possibilities of the money being released in proper quantities when needed.

Is there any problem of that sort, Mr. Secretary?

Mr. HOLADAY. I don't believe so. I believe we are geared both moneywise—this is one of the high national priority projects. Therefore it is carried by the OSD Ballistic Missile Committee, of which I am chairman, and we have most of the paperwork pretty well along, so that as soon as you give us the authority so that we can have the money, we plan to move it right to the Army very quickly.

The CHAIRMAN. In other words, as soon as the Congress appropriates the money? Thus far, there has been no turndown by Congress, has there?

Mr. HOLADAY. Not yet. We have seen no indication that there would be a turndown.

The CHAIRMAN. To my mind, you have got before you the No. 1 problem in the defense of the country. Isn't that correct?

Mr. HOLADAY. It is one of the big ones we have.

The CHAIRMAN. Any further questions?

Mr. MOELLER. Mr. Chairman, I would like to ask one.

The CHAIRMAN. Mr. Moeller.

Mr. MOELLER. Mr. Secretary, I wonder, in spite of all the preparations that are being made, these vast expenditures, and so forth, do you see any ray of hope that the enemy might slacken in one area or another; that we might some day start talking to the American people in terms of a little more hope for the future than we can talk about today?

Mr. HOLADAY. Well, I wish Secretary McElroy was here to discuss that question with you, because he has discussed it with a number of people.

We see some hope, very slight, in the fact that he is not apparently pushing ahead with manned bombers.

* * * * * * *

However, when you take what took place over in the conference over here, the Geneva Conference, you become somewhat discouraged.

How much are they bluffing? I think right at the present time it is the feeling of the Secretary that we have got to keep our backs pretty stiff here right during the next few months to not let him get by with something * * *.

The CHAIRMAN. He fired at one of our planes, too, over there for no reason whatsoever.

You get discouraged there, too, don't you?

Mr. HOLADAY. Yes, sir, very definitely.

Mr. MOELLER. Well, do you feel that as of the present moment the Geneva Conferences may have caused some provocation for the Soviets?

Mr. HOLADAY. I think so. This is the Secretary's feeling and certainly mine. They may have their neck out further than they would like to have it at the present time.

Mr. MOELLER. You don't think they might retrench?

Mr. HOLADAY. If we give them a polite way so that they don't have to swallow too much, they might do it. At least, I am personally hoping so myself, that this can be accomplished.

Mr. MOELLER. Do you feel that the American populace is as wrought up about this, as concerned about this, as it should be? Do you think that more talking ought to be done about this to arouse the American public, and what good would be accomplished if it were aroused?

Mr. HOLADAY. Well, I ask myself that question quite often. I have just been away for a 3-day trip out through the Middle West. It was my own trip, not a Government trip, so I did get to talk to a lot of people. I was sort of surprised at what appears to be a lack of interest; at the things which we are worrying ourselves about and getting gray hairs about, they don't seem to be worried about at all.

Mr. MOELLER. That is right, quite a lethargy.

Mr. HOLADAY. I found that out in the past few days.

The CHAIRMAN. We certainly thank you, Mr. Secretary, for coming here.

Mr. DUCANDER. Mr. Chairman, one thing before you close, please.

Mr. Secretary, do you know anything about the British-operated Thor blow-up in California that was in the papers a couple of days ago? Do you have any information on that?

Mr. HOLADAY. I don't have a thing on that.

Is that the Thor we blew up when it was launched off the Pacific Missile Range?

Mr. WAGGONER. Yes. The missile in question was launched by a British crew at the Vandenberg test range. The missile took off successfully. However, it did not progress out to sea as it was supposed to. Instead, it went up vertically and was finally destroyed by range command.

* * * * * * *

The CHAIRMAN. What about the one we fired yesterday?

Mr. HOLADAY. That was the Vanguard. I haven't had time to talk to the folks at NASA.

The CHAIRMAN. The newspapers said it did not go into orbit. I am sure that is correct.

Mr. HOLADAY. Apparently, the pressure-regulating valve on the last stage, as I understand it, stuck up, which put too much pressure into the fuel tanks and blew the fuel tanks apart.

The CHAIRMAN. The third stage blew apart?

Mr. HOLADAY. That is right. The bottles that carry the pressurization in there are about 6,000 pounds per square inch, and we feed into a regulator valve into the fuel tanks to get the fuel to feed out of there, and apparently, the way I understand what I read in this, there the regulator valve must have gone wide open, and of course the tanks burst wide open.

The CHAIRMAN. If the Russians are not any further along than we are, we can sleep a night or two, anyway, in relative safety.

I want to thank you, Mr. Secretary, for coming here. Your briefing has been most enlightening.

This committee is the Science and Astronautics Committee. We are interested in the program from the standpoint of the development of the space program and also the scientific development. The emphasis is not on strategy here but on scientific and space development.

We were very glad to have you here, Mr. Secretary.

We have two staff members from the Government Operations Committee, who, as I understand it, are here by your request, and we are happy to have them at this committee meeting.

(Whereupon, at 12 noon, the committee proceeded to other business.)

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